

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims

1. (currently amended) A disk array control apparatus comprising:

a control element constructed and arranged so that the control element generates multiple I/O processes ~~a multitask~~ for processing ~~a single I/O request~~ requests to a disk array, the ~~multitask~~ multiple I/O processes including first tasks with a first priority and second tasks with a second priority that is lower than the first priority, wherein an upper limit of a number of the first tasks is a first number, and wherein the first tasks and the second tasks are each I/O processes to said disk array;

a first element constructed and arranged so that the first element calculates a cache hit ratio at a disk cache memory; and

a second element constructed and arranged so that ~~when the single I/O request is input to the disk array control apparatus~~ the second element executes the first tasks until the number of the first tasks being executed reaches the first number, and executes the second tasks and the first tasks when the number of the first tasks reaches the first number, except that the second element executes only the first tasks when the calculated cache

hit ratio is above a prescribed value even if the number of first tasks reaches the first number.

2. (currently amended) The disk array control apparatus as claimed in claim 1, wherein a number of said I/O processes tasks in the multitask decreases when the calculated cache hit ratio is above the prescribed value and increases when the calculated cache hit ratio is below the prescribed value.

3. (currently amended) A disk array control apparatus comprising:

a control element constructed and arranged so that the control element generates multiple I/O processes a multitask for processing ~~a single I/O request requests to a disk array~~, the multitask multiple I/O processes including first tasks with a first priority and second tasks with a second priority that is lower than the first priority, wherein an upper limit of a number of the first tasks is a first number;

a first element constructed and arranged so that the first element calculates a cache hit ratio at a disk cache memory; and

a second element which executes the first tasks until a number of the first tasks being executed reaches the first number, and executes the first and second tasks when the number of the first tasks reaches the first number,

wherein said second element executes only the first tasks when the cache hit ratio is above a prescribed value.

4. (currently amended) The disk array control apparatus according to claim 1, further comprising:

a host I/O reception unit arranged so that the host I/O reception unit receives as an input the single I/O request requests from a host computer, the I/O reception unit performing content analysis upon generating as an output the single I/O request requests, and

wherein the first element includes

a cache hit determination unit constructed and arranged to determine whether or not an the single I/O process request is causing a cache hit at the disk cache memory, and

a cache hit ratio monitor unit constructed and arranged to calculate and output the cache hit ratio within some period of time by using a determination result of the cache hit determination unit.

5. (previously presented) The disk array control apparatus as claimed in claim 4, further comprising:

a task priority change unit constructed and arranged to dynamically change one of the second tasks to one of the first tasks after starting execution of the one second task, the task priority change unit changing the changed task back to one of the second tasks at execution termination time.

6. (currently amended) A disk array control method comprising the steps of:

generating multiple I/O processes a ~~multitask~~ for processing a single I/O request requests to a disk array, the ~~multitask~~ multiple I/O processes including first tasks with a first priority and second tasks with a second priority that is lower than the first priority, wherein an upper limit of a number of the first tasks is a first number;

calculating a cache hit ratio at a disk cache memory;

executing the first tasks until a number of the first tasks reaches the first number; and

executing the first and second tasks when the number of the first tasks reaches the first number, except that only the first tasks are executed when the calculated cache hit ratio is above a prescribed value even if the number of first tasks reaches the first number.

7. (currently amended) The disk array control method as claimed in claim 6, further comprising ~~wherein the adjusting step comprises the steps of:~~

decreasing the number of tasks being executed in the multitask when the cache hit ratio is above the first number prescribed value; and

increasing the number of tasks being executed in the multitask when the cache hit ratio is not above the first number prescribed value.

8. (canceled)

9. (currently amended) The disk array control method according to claim 6, further comprising the steps of:

    inputting an the single I/O request from a host computer;  
    determining whether an the single I/O process request is causing a cache hit at a disk cache memory; and  
    calculating the cache hit ratio within some period of time based on results of the determining step.

10. (currently amended) The disk array control method as claimed in claim 9, further comprising the step of:

    changing one of the second tasks to one of the first tasks after starting execution of the one of the second tasks, and changing the changed task back to one of the second tasks at execution termination time.

11-16. (canceled)